

Work Order ID 156725***156725***

Page 1

Tuesday, February 07, 2017 1:26:29 PM

Item ID: D3619-2

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Grommet

Stop

NS2

Start Date: 2/9/2017 Start Qty: 4.00

4

Split-1-

Cust Item ID:

DAS

Required Date: 2/23/2017 Req'd Qty: 4.00

4

3x

MAR 01 2017

Customer:

13

Reference:

Approvals:

Process Plan:

DAS
21
9-89

Date:

FEB 07 2017

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3619

Rev A

100

0.00

100

Purchasing

PURCHASING

Memo

0.00

Purchasing

Issue P/O: 35280 Purchase Part Number: 9610K18 Supplier: MC
MASTER CARRCertificate of conformity is required

4

FEB 10 2017

DAS
13
9-89

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

0.01

Packaging

Ensure material certification is attached

3x SP1702-15

120

QC6- Inspect dimensions to drawing

0.00

120

QC

Memo

0.00

Quality Control

3

DAS
38
9-89
FEB 16 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 156725***156725***

Page 2

Tuesday, February 07, 2017 1:26:29 PM

Item ID: D3619-2 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Grommet
Start Date: 2/9/2017 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 2/23/2017 Req'd Qty: 4.00 ***4*** Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Packaging	0.00				3			
130									
Packaging	Memo	0.00							
Packaging	****Remove supplier paperwork from box.***** Identify and StockLocation: <u>Stamps</u>								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.07							
Quality Control									

FEB 16 2017

DAS
21
9-89
FEB 21 2017JMF
17-2-17

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By 	
QC / QA Coordinator Approval 									
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Tuesday, February 07, 2017 1:26:32 PM

Page 1

Work Order ID: 156725

156725

Parent Item: D3619-2

D3619-2

Parent Item Name: Grommet

Start Date: 2/9/2017

Required Date: 2/23/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:A New Issue 07-04-09 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
9610K18 *9610K18* GROMMET		Purchased	No			110	Each	0.0000	1	43 3x 8017-02-15			

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

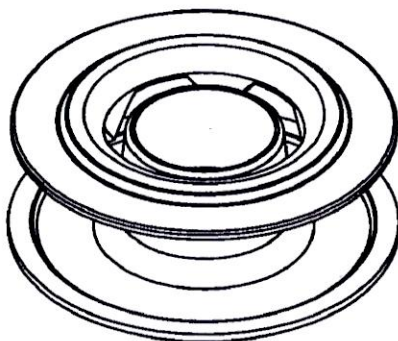
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								



DESIGN <i>LE</i>	DRAWN BY <i>LE</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3619	REV. A SHEET 1 OF 1
DATE 07.03.26		TITLE GROMMET	SCALE NTS
REV A	DATE 07.03.26	DESCRIPTION NEW ISSUE	

SPECIFICATION CONTROL DRAWING



RELEASED
07 04 02 #

D3619-X GROMMET,
WHERE X REPRESENTS THE GROMMET TRADE SIZE

DART P/N	TRADE SIZE	DESCRIPTION	HOLE SIZE	MAX. MTL THICKNESS	MCMaster CARR P/N
D3619-0	0	BRASS GROMMET W/ TEETH	1/4	0.110	9610K16
D3619-1	1	BRASS GROMMET W/ TEETH	9/32	0.120	9610K17
D3619-2	2	BRASS GROMMET W/ TEETH	3/8	0.150	9610K18
D3619-3	3	BRASS GROMMET W/ TEETH	7/16	0.230	9610K19
D3619-4	4	BRASS GROMMET W/ TEETH	1/2	0.300	9610K21

NOTES:

1) PURCHASE INFO: MCMaster-CARR P/N'S INCLUDE THE FOLLOWING:

48 GROMMETS FOR SIZE 0 & 1,
24 GROMMETS FOR SIZE 2, 3 & 4,
D3619-XT1 HOLE PUNCH,
D3619-XT2 STRIKER BLOCK,
D3619-XT3 PUNCH AND
D3619-XT4 DIE

2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
3) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 156725ms
17-03-07

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval					

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO35280**

Purchase Order Date 2/10/2017

PO Print Date 2/10/2017

Page Number 1 of 7

Order From :
MCMaster-CARR SUPPLY CO,
P.O. BOX 7690
CHICAGO, IL 60680-7690
US

VU-MCM001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FEB 10 2017

Contact Name
Vendor Phone 330 995 5500

Ship To Contact
Ship To Phone
Ship Via: Purolator ground ppd
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 10
Currency USD
FOB FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	91525A120 AS PER DWG D3546 REV. A B156723	washer	2/14/2017 Yes 2/14/2017		25.00 Each	\$0.25	\$6.26
Line Total:							\$6.26
2	92311A564 AS PER DWG D3533 REV. B B156724	Set Screw	2/14/2017 Yes 2/14/2017		50.00 Each	\$0.23	\$11.65
Line Total:							\$11.65
3	9610K18 AS PER DWG D3619 REV. A B156725	GROMMET ✓	2/14/2017 Yes 2/14/2017		4.00 Each	\$13.31	\$53.24

recd 3x.
8/17-02-15

Note:

2/10/2017



200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
PO35280
Order Placed By
Chantal Lavoie

McMaster-Carr Number
6949633-02

Page 1 of 2
02/13/2017

Line	Product	Ordered	Shipped
1	91525A120 316 Stainless Steel Washer Oversized, 1/4" Screw Size, 0.281" ID, 1" OD, Packs of 25	1 Pack	1
2	92311A564 18-8 Stainless Steel Cup Point Set Screw 1/4"-28 Thread, 1" Long, Packs of 50	1 Pack	1
3	9610K18 Mil. Spec. Two-Piece Grommet Kit Trade Size 2, 0.815" OD, 24 Grommets with Teeth Washers	4 Each	3
4	59915K274 PTFE-Lined Stainless Steel Ball Joint Rod End 3/8"-24 RH Male Shank, 3/8" Ball ID, 1-1/4" Long Thread	15 Each	15
5	8601K48 Wear-Resistant Natural Gum Foam Sheet 3/4" Thick, 36" Wide, Medium, 1' Long	1 Foot	1
6	7510A653 Plastic Syringe with Luer Lock Tip, 0.34 oz. Capacity, Packs of 10, Our 1 Pk = Your 10 Ea	1 Pack	1
7	7291A24 Fastener-Holding Nutdriver Bit for Power Tools, Magnetic, 7/16" Hex Size, 2-5/8" Long	5 Each	5
8	7291A45 Fastener-Holding Nutdriver Bit for Power Tools, Magnetic, 1/2" Hex Size, 2-5/8" Long	5 Each	5
9	7291A23 Fastener-Holding Nutdriver Bit for Power Tools, Magnetic, 3/8" Hex Size, 2-5/8" Long	5 Each	5
10	7291A22 Fastener-Holding Nutdriver Bit for Power Tools, Magnetic, 5/16" Hex Size, 2-5/8" Long	5 Each	5
11	7291A21 Fastener-Holding Nutdriver Bit for Power Tools, Magnetic, 1/4" Hex Size, 2-5/8" Long	5 Each	5
12	5492A66 Ball-End Hex Bit 1/4" Hex Shank for Power Tools, 5/32" Hex Size	5 Each	5
13	5492A67 Ball-End Hex Bit 1/4" Hex Shank for Power Tools, 3/16" Hex Size	5 Each	5
14	5492A64 Ball-End Hex Bit 1/4" Hex Shank for Power Tools, 1/8" Hex Size	5 Each	5
15	5803A91 Tight-Clearance Bit Adapter for Power Tools	1 Each	1
16	29305A13 Hex-Shank Drill Bit 1/8", 2-5/8" Overall Length, .97" Drill Depth	5 Each	5
17	1284K75 Grease with Lithium Thickener 10-Ounce Aerosol	4 Each	4

SP17-02-15

DAS 38 9-89

Shipped separately from our Chicago warehouse on 02/13